A Report on Internship Programme at Dulanga Coal Mines, NTPC Ltd., Sundargarh.

The objective of the internship project was to familiarize the students with the various stages involved in the production of coal-based thermal power and to understand the chemistry and technology behind coal mining, preparation, purification and the methods employed to ensure the quality and efficiency of coal as a fuel source for power generation.

During the visit to the NTPC, Ltd. on dated.20.01.2020 to 25.01.2020, they had the opportunity to explore the following aspects of coal production and utilization:

a. **Coal Mining Methods:** The students gained insights into the different coal mining techniques, including surface mining and underground mining. They learned about the geological factors influencing mining methods and the environmental impact assessment associated with coal extraction.

b. **Coal Preparation and Purification:** The interns observed the coal preparation process, which involves crushing, screening and washing to remove impurities. Additionally, they learned about coal purification methods such as coal blending, gravity separation and flotation techniques.

c. **Sampling and Analysis Methods:** The interns were introduced to the methods used for coal sampling and analysis to determine its chemical composition, calorific value, moisture content and other properties essential for efficient combustion in thermal power plants.

Key Learnings and important takeaways:

a. **Chemical Composition of Coal:** The students deepened their understanding of the chemical composition of coal and its influence on combustion efficiency and environmental emissions.

b. **Quality Control Measures:** They learned about the quality control measures implemented at each stage of coal production, from mining to power generation, ensuring consistent fuel quality.

c. **Environmental Regulations:** They gained insights into the environmental regulations governing the thermal power industry, particularly those related to emissions control and sustainable mining practices.

d. **Safety Protocols:** They were made aware of the safety protocols and best practices followed in coal mines and thermal power plants to ensure the well-being of workers and the surrounding communities.

Conclusion:

The internship at the NTPC, Ltd. was a valuable and enriching experience for all the 12 M.Sc. Chemistry students. They extend their sincere gratitude to the team of experts guided the event and the opportunity to learn from their extensive knowledge and practical expertise in the field of coal-based thermal power generation.